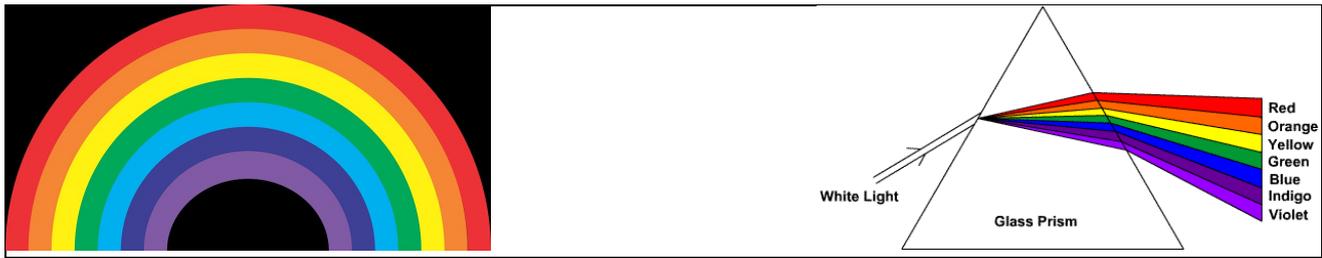
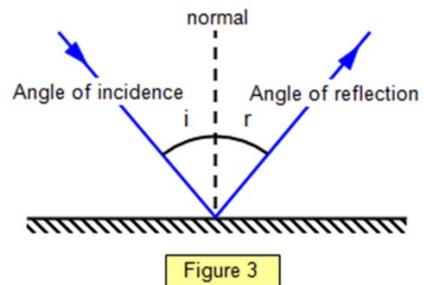
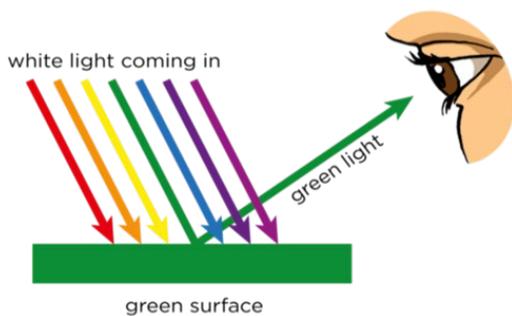


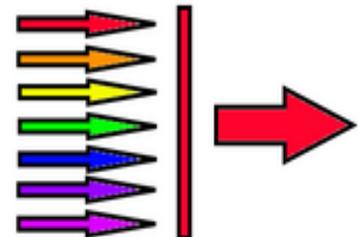
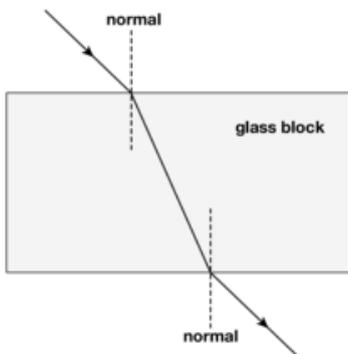
Light



When a light ray meets a different medium, some of it is absorbed and some reflected. For a mirror, the angle of incidence equals the angle of reflection. The ray model can describe the formation of an image in a mirror and how objects appear different colours.



When light enters a denser medium it bends towards the normal; when it enters a less dense medium it bends away from the normal. Refraction through lenses and prisms can be described using a ray diagram as a model.



Light changes direction when it moves between two materials (water and air).
Light bends towards or away from the normal.
We call this **refraction**.

A red filter only lets red light through. The other colours are absorbed.

Light travels at 300 million metres per second in a vacuum. Different colours of light have different frequencies.

Property	Light	Sound
Type of wave	Transverse	Longitudinal
Can they travel through a vacuum?	Yes	No
Can they be reflected?	Yes	Yes
Can they be refracted?	Yes	Yes
Can they interfere?	Yes	Yes

Keywords

- Incident ray:** The incoming ray.
- Reflected ray:** The outgoing ray.
- Normal line:** From which angles are measured, at right angles to the surface.
- Angle of reflection:** Between the normal and reflected ray.
- Angle of incidence:** Between the normal and incident ray.
- Refraction:** Change in the direction of light going from one material into another.
- Absorption:** When energy is transferred from light to a material.
- Scattering:** When light bounces off an object in all directions.
- Transparent:** A material that allows all light to pass through it.
- Translucent:** A material that allows some light to pass through it.
- Opaque:** A material that allows no light to pass through it.
- Convex lens:** A lens that is thicker in the middle which bends light rays towards each other.
- Concave lens:** A lens that is thinner in the middle which spreads out light rays.
- Retina:** Layer at the back of the eye with light detecting cells and where an image is formed.
- Ultraviolet (UV):** Waves with frequencies higher than light, which human eyes cannot detect.

Subject	Year 8 Waves	
What are the colours of the rainbow?	Red, orange, yellow, green, blue, indigo and violet.	
What colour light do we get if we blend all the rainbow colours together?	White.	
Explain the colour black.	An absence of all colours.	
Why does a red jumper appear red?	Red light reflects off of it.	
Why do we get different shades of red?	Red and other colours reflect off and blend together.	
What is the speed of light (m/s)?	300,000,000m/s.	
What does reflection mean?	Bouncing back off a smooth surface.	
The angle of reflection = The angle of _____.	Incidence.	
Copy and complete:		
What do we call this bending of light?	Refraction.	
What colour of light goes through a red filter?	Red.	
Name 3 colours absorbed by a red filter.	Orange, yellow, green, blue, indigo and violet.	
What does transparent mean?	Allows all light to pass through it.	
What does translucent mean?	Allows some light to pass through it.	
What does opaque mean?	Allows no light to pass through it.	
Copy and complete:		
Property	Light	Sound
Type of wave	Transverse	Longitudinal
Can they travel through a vacuum?	Yes	No
Can they be reflected?	Yes	Yes
Can they be refracted?	Yes	Yes
Can they interfere?	Yes	Yes